

Chapter 4

Planning

Transit planning is a process to determine the community's current and future needs for public transportation and to choose the best match between those needs and the available resources. The needs can be multifaceted, involving unserved or underserved populations, geographic areas, or lack of appropriate equipment. The resources can include finances, equipment, workforce and roadways.

The planning for transit must be integrated and coordinated with many other types of planning to be effective. By law, transit planning is part of an intermodal transportation planning process covering primarily highways and transit, but also touching on other transportation modes. The best transit planning processes also integrate transit planning with human services planning, as well as planning for other community services.

Exactly how the planning process is carried out and how successful it might be varies from area to area. There is, however, a basic structure and basic elements that are common to transportation planning anywhere within the state of Iowa. This chapter describes that basic structure and describes some of the elements of transit planning that are seen in Iowa. It also discusses other issues relating to transit planning in Iowa.

Iowa's Transportation Planning Organizations

The federal government requires intermodal transportation planning. For the last three decades, the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) have issued joint planning regulations that require an intermodal planning process at both the metropolitan and the state level. (Regulations found in 49 CFR Part 613 and 23 CFR Part 450 http://www.access.gpo.gov/nara/cfr/waisidx_01/49cfrv5_01.html#601.) Please also see http://www.access.gpo.gov/nara/cfr/waisidx_01/49cfr613_01.html and <http://www.fhwa.dot.gov/legisregs/directives/fapg/Cfr450c.htm>.

Metropolitan Planning Organizations (MPOs) – At the metropolitan level, the joint planning regulations require the designation of a MPO by the local units of general government and the governor, or governor of each state if the MPO extends into other states. The boundaries of the MPO are required to, at a minimum, include all territory included in the "urbanized area" by the most recent U.S. Census, and all territory expected to become urbanized within the next 20 years. The MPO is responsible for preparing transportation plans for this area and for programming any federal transportation funds to be spent in the area. Go to http://www.iatransit.com/admin/handbook/docs/ch4_mpo_list.doc for a list of Iowa's MPOs.

Regional Planning Affiliations (RPAs) – Outside the metropolitan areas, the joint planning regulations require the state to have a planning process that involves consultation with local officials. Iowa has chosen to accomplish this through a system of multicounty RPAs that operate along the same principles as the MPOs. Although Iowa DOT originally proposed 16 RPAs with boundaries similar to those of the regional transit systems, a compromise between the DOT and the counties resulted in formation of 18 RPAs, with some transit regions split across two, or even three,

planning regions. For a list of Iowa's RPA's go to http://www.iatransit.com/admin/handbook/docs/ch4_rpa_list.doc. To view a map showing RPA boundaries go to <http://www.dot.state.ia.us/tranplan.htm>.

Planning Committees and Representation – Each MPO or RPA is controlled by a Policy Committee made up primarily of elected officials from the local units of government. Each RPA and MPO also has a Technical Committee, typically made up of local planners, zoning administrators, public works directors, transit managers, airport operators, and engineers, etc., who advise the Policy Committee on transportation planning issues. The joint planning regulations require discrete representation for major operators from each transportation mode, including transit, on the Policy committees of newly designated MPOs, but do not require changes in committee membership within existing planning organizations. Iowa has encouraged transit operators to be represented on all MPO and RPA committees, but a number of Iowa's planning organizations do not include a transit representative on the policy committee, and a few do not have a transit representative on the technical committee.

Some MPOs and RPAs have a separate Transit Advisory Committee, which is not at the same level as the Technical Committee, but which does provide a forum for local human service agencies, school districts, etc. to work with the transit operator(s) on topics relating to transit planning and operations.

The Role of the MPO/RPA in Transportation Planning – MPOs and RPAs are responsible for preparing long-range and short-range transportation plans for their areas. They are also responsible for preparing a program document listing all highway and transit projects that will receive federal transportation funding, as well as providing transportation planning and technical assistance to local governments and project sponsors in their areas. In Iowa, the programming function is much more than just assembling a list of projects that other parties have decided to fund with federal transportation assistance. This is because Iowa provides each MPO and RPA with an apportionment of flexible funding under the Surface Transportation Program (STP) that the MPO/RPA Policy Committee can program to any eligible projects, whether they be streets or highways, transit capital, or bicycle/pedestrian facilities.

Funding for the MPO/RPA Transportation Planning Process – FTA and FHWA provide specific "Metropolitan Planning" funding programs to support the MPO process that they require. This includes FTA 5303 funds and FHWA "PL" funds. Section 5303 funds are based on a formula that guarantees each MPO the amount of funding they received in state fiscal year 1992, plus additional funds based on population. PL funds are allocated based on population. FTA funding from the 5307 program can also be used to support transportation planning within metropolitan areas, as can STP funds under FHWA.

Because the RPA process is unique to Iowa, there are no federal programs dedicated to support it. Both FTA and FHWA do provide "State Planning and Research" (SPR) funds to support the overall statewide planning effort. Iowa DOT uses all of its SPR funds from FTA for support of the RPA process and supplements these funds with an off-the-top portion of its 5311 apportionment. These funds are allocated among the RPAs on the basis of a formula that gives each RPA a basic allocation, plus additional funding reflecting the number of counties and population of the area. On the highway

side, SPR funds are not used to support the RPA process. Instead RPAs are expected to use a portion of their STP formula allocation for support of the planning function. Each RPA Policy committee decides what amount of the RPA's STP funding allocation will be used for this purpose.

No state funds currently support the MPO and RPA planning processes. All match required for the federal funds used for local transportation planning must be generated by the local planning agencies.

Transportation Planning Activities

The following paragraphs describe some of the intermodal planning activities that should be of benefit to transit, as well as more targeted transit planning activities that Iowa MPOs or RPAs might get involved in.

Transportation Planning Work Program (TPWP) – Each MPO and RPA must annually prepare a work program that discusses the current transportation issues for its area and describes what transportation planning activities are proposed for the fiscal year. This work program should be developed with input from all major operators from the various transportation modes, even if they are not represented on the planning organization's committees. Although certain transportation planning activities are required of all MPOs or RPAs, the work plan from each should be responsive to the specific needs raised by the transportation agencies in its planning area.

Transit systems need to actively participate in the process of developing these TPWPs. Although FTA funds used for support of the intermodal transportation planning process are not restricted to fund only transit-related planning activities, there should be an expectation that transit needs will be addressed somewhat proportionately to the share of the planning funding contributed by transit. By participating in the process and actively advocating for transit interests, the transit manager can help assure that transit receives an appropriate share of the benefits of the transportation planning effort. In monitoring this, the transit manager must recognize that, even though some of the common intermodal transportation planning activities might not, at first thought, be considered a transit planning activity, they can be very valuable to transit. It may be necessary, however, for the transit system to monitor how some of these activities are being designed and carried out to assure that their potential value is realized.

Development and Maintenance of a Transportation Database – Most MPOs and RPAs maintain a database of information about their planning area, land-use activities, socio-economic information, and transportation infrastructure inventories, which provides the foundation for all their transportation plans and analyses. In recent years, most planning agencies have used Geographic Information Systems (GIS) to map the databases, which can be of considerable value to transit. Details that can maximize the benefits to transit include employment and shopping locations, locations of activity centers serving elderly persons and persons with disabilities, location of bus fixed routes, bus stops, bus stop signs, shelters, other transit facilities, etc. Within the street inventories, information on weight restrictions, parking restrictions, and average speeds can be valuable for transit planning. Integration of the network information and a street address database can also be beneficial to transit dispatch.

Long-range Transportation Plan – One of the required activities for all MPOs and RPAs is the development of a long-range transportation plan. The joint planning regulations require that the plan address a minimum 20-year planning horizon. Generally the process involves projecting how the area will change over this time, and what transportation developments will be needed. This can involve breaking the planning area into transportation analysis zones and projecting socio-economic variables for each zone. The next step would apply a transportation model to project travel demand as a result of those projections. Next, the travel would be assigned to the current street and transit network to identify areas that will be over capacity. Finally, an analysis of alternative strategies or projects for addressing identified needs is done. The long-range plan can also be much less technical, depending on the nature of the planning area. It is required that transit be addressed in the plan.

While it may not be practical to design detailed bus routes to be implemented 10, 15 or 20 years into the future, the plan is valuable in getting area officials to commit to a future for transit. Things to consider may involve service level policies (e.g. service within ___ blocks of all contiguous residential development with a density of 1000 persons per square mile; ___ minute headways along major corridors; coordination of services for all client agencies, etc.) long-term replacement of facilities, changes in type of transit vehicle, or even identification of a point at which service densities might make rail transit feasible. Even if local officials may not be able to provide transit funding today, it is entirely appropriate to ask them to envision a future with a strong transit component and to outline the steps that would be necessary to reach that goal. Developing that vision and thinking through the steps can start the process of developing support for that future. Getting a long-range plan adopted with a strong transit component and well laid out strategies, provides an opportunity to frame future funding discussions in terms of progress toward the community's goal.

If major changes are proposed in other modes, it is important to identify the impacts to transit. If new transit service is indicated, it is important to have transit costs tied into the discussion of the proposed project from the beginning.

Transportation Improvement Program (TIP) – Each MPO and RPA is required to annually adopt a TIP listing all projects within its planning area that are programmed to receive funding through either FTA or FHWA. The TIP includes an "Annual Element" listing projects to be obligated during the current fiscal year, and also two additional years of projects. For each project, the TIP must give the name of the project sponsor, a description of the project, the estimated overall project cost, and the amount and source of the federal funding to be used. For transit projects, the TIP must also document the justification for the project. The individual TIPs are aggregated by Iowa DOT into a Statewide Transportation Improvement Program (STIP). To facilitate this, Iowa has established a standardized format for submission of TIPs for inclusion in the STIP. (Iowa DOT's Office of Program Management has issued guidance concerning this process, available on Iowa DOT's website: http://www.dot.state.ia.us/pdf_files/stip_guidelines_jan2004.pdf.)

Transit systems need to make sure that any project they wish to have included in a direct or statewide FTA grant is included in the Annual Element of an approved TIP, since FTA cannot obligate funds to any project that is not in a current Annual Element. In discussing the project scheduling and the TIP process with planners, it is important for transit managers to be aware that FTA considers a project obligated when they include it in an approved grant. This differs from FHWA's process, under

which project obligation is closely tied to the letting of project bids. Highway projects need to be carried over into the next year of the TIP if they won't be let before the end of the fiscal year. Transit projects should not be carried over to further years of the TIP once they have been included in an approved FTA grant. This includes flexible funds programmed to transit, since FHWA considers the funds programmed at the point money is transferred to FTA, and FTA considers them programmed when a grant containing the project is approved.

Most MPOs and RPAs consider their local process for programming flexible STP funds to be part of the TIP process. Transit systems should pay particular attention to the STP process, since transit capital projects are an eligible use of STP dollars. Almost three-fourths of Iowa's planning agencies have programmed STP funding for a transit project at sometime since the program began in 1992. There are several of the planning agencies that program STP funds for transit consistently every year. Transit systems have succeeded in receiving STP funding both in areas that use a project-prioritization programming technique and those which sub-allocate funds. Transit systems wanting to access these funds need to stay active in the process and work with their planning agency and the members of their Technical and Policy Committees to get transit included in the local process.

Transit systems wishing to have capital projects considered as candidates for funding through any congressional earmark of 5309 funds to the state, must make sure their project is listed as a 5309 project in the Annual Element of the TIP/STIP. Once the federal appropriation is enacted, OPT will work with the transit industry to adjust the statewide programming to the actual funding level, using the prioritization tools that are part of the [Public Transit Equipment and Facilities Management System \(PTMS\)](#). (As part of this process, candidate projects may be selected to receive 5309 funding, or they may be funded through the "peer pools" for capital funding established under the 5307 or 5311 programs. OPT will adjust the STIP to reflect these decisions and will move all projects not selected for current year funding to the second year of the program, unless informed by the transit system that the project will be funded in some other way. Local TIPs should also be updated to reflect these changes.

As a general rule, federal transportation funds cannot pay for any costs that were encumbered prior to the obligation of the federal funds. FTA has granted "pre-award authority to incur costs" for all transit projects funded with FTA formula funds or flexible funds authorized under the Transportation Equity Act of the 21st Century (TEA-21), as long as the project is programmed as such in a STIP, and as long as all federal requirements and procedures have been followed. This means that a project sponsor can proceed with a procurement or implement a service using only non-federal dollars, and then get reimbursed once the federal grant is approved. This policy covers both FTA formula funds and flexible funding for transit that will be administered by FTA. The same authority is granted for projects funded by earmarked 5309 funds each year when FTA publishes the apportionments of the year's appropriations in the Federal Register. Pre-award authority for JARC projects may be granted either at the time of apportionment or when the solicitation for JARC applications is issued. Because of Iowa's practice of front-loading the STIP with transit projects that are candidates for statewide 5309 funding that may not be realized, such projects shall not be considered to have advanced authority to incur costs until they are confirmed to be in the Annual Element of the STIP as reconfirmed by the Iowa DOT subsequent to the publication of the FTA apportionments. [Neither FTA nor Iowa DOT make any assurance that funding will be

approved for a specific project until the grant is approved. All risks related to the project's eligibility for reimbursement, or timing of the approval are borne by the transit system.] (See [Chapter 9](#) – Procurement for further explanation of pre-award authority.)

Please note that project justification is required for all transit projects included in the TIP. Projects for replacement of revenue vehicles can rely on the vehicle's age and mileage as documented in the [Public Transit Equipment and Facilities Management System \(PTMS\)](#). Any other types of transit capital and operating projects, other than general operating support for existing service, should be supported by a description and justification of the project. When expansion, rehabilitation or new transit facility projects in excess of \$75,000 are proposed, a separate feasibility study, based on FTA's guidance, is required prior to the project being programmed in the Annual Element of a TIP.

Transit Service Planning – One of the general types of transit planning functions is service planning and analysis. This can involve looking at the need for new services in growth areas or in areas or groups that have been un-served or under-served. It can also involve looking at existing services to see if there might be reason to make adjustments, such as when a new activity center opens in the vicinity of an existing route or new residential developments allow new routing options in outlying areas. Sometimes it may be appropriate to consider a wholesale restructuring of route services to change the focus of a system. For regional systems, there might be a consideration of whether scheduled shuttle services might help to address high volumes of requests from certain locations, or how to integrate trips for a new clientele considering contracting service. It might also involve how to get more benefit from under-utilized portions of existing services.

The planning agency can work with the transit system to look at such issues. Often, the planning agency can help collect data needed for the analysis. They can help track down service standards that may have been developed and which might be usable locally. They can coordinate public input sessions, and help facilitate coordination with other agencies that might be hesitant to respond to the transit system because of a perception that the transit system is a competitor. Often involving the planning agency in transit service analyses or studies can generate increased support for any recommendations, since there is less chance that the recommendations will be seen as self-serving.

Transit Capital Planning – Capital improvements are very important to the delivery of transit services and justifications are required for each capital project. Capital planning for transit can involve analyzing the fleet in terms of FTA and OPT's useful life guidance to develop a replacement schedule (see <http://www.iatransit.com/regulations/ptms.asp>), or comparing the benefits of vehicle rehabilitation vs. replacement. It can also include analyzing vehicle utilization to determine whether additional vehicles are needed to accommodate new services, or even to make decisions on the appropriate vehicle sizing for either a specific service or for the entire fleet.

On the facility side, capital planning can involve going through an existing facility to evaluate the adequacy or need for improvement of storage space, maintenance bays, heating/air-conditioning/ventilation systems, etc. This may lead to a logical schedule of projects for facility repairs or upgrades, or it could trigger a feasibility

study to consider the need for a new facility. Similar analyses may be appropriate for offices and other types of transit facilities. An organized facility analysis avoids the problems caused by a series of unplanned facility projects, which can end up with conflicting schedules and requirements.

For new facilities or major expansions, FTA requires a Facility Feasibility Study that documents the need for the improvement and evaluates alternate solutions. Part of the evaluation of alternatives, or at least the chosen alternative, must be environmental findings, including flood plain analysis, environmental justice, and other analyses with which most planning agencies have a degree of experience. FTA provides general written guidance on the contents of such a study. For a checklist and an excerpt from [FTA Circular 9300.1](http://www.iatransit.com/admin/handbook/docs/ch4_feas_study.doc) go to http://www.iatransit.com/admin/handbook/docs/ch4_feas_study.doc. The complete [Circular 9300.1](http://www.fta.dot.gov/legal/guidance/circulars/9000/433_1223_ENG_HTML.htm) can be found on the FTA website: http://www.fta.dot.gov/legal/guidance/circulars/9000/433_1223_ENG_HTML.htm. OPT has been involved in quite a number of FTA funded facility projects and can provide examples from other Iowa transit systems. go to http://www.iatransit.com/admin/handbook/docs/ch4_prob_ce.doc for guidance on environmental assessments and categorical exclusions.

Capital planning is also critical with regards to support equipment. The benefits of acquiring the equipment should be considered in light of both the purchase cost and the life cycle cost to use it. Justification of the purchase should include identification of the item's estimated useful life.

Identification of the relative costs or leasing vs. ownership is an important part of capital planning for support equipment as well as for vehicles and facilities.

Other Types of Transit Planning Activities – There are a number of specific transit planning activities that may be appropriate. These include:

- **Transit Development Plans**, or TDPs, are a general short-range planning process for a transit system that was at one time required of each of Iowa's 5311 subrecipient transit systems annually. It included both service and fleet analyses. Several systems still follow the TDP Guidance, which can be obtained from OPT.
- **ADA Transition Plan Updates** were required in the years immediately after the implementation of FTA's accessibility rules following passage of the Americans with Disabilities Act of 1991. Once most of the implementation deadlines were past, the requirement for annual updates to the transition plans was dropped. It is appropriate, however, to do a periodic review of where each transit system stands on implementation of the various ADA service, equipment and facility requirements. This will allow the community to determine if implementation has been completed, and if any decisions that were made along the way may now need to be reconsidered, based on recent experiences with usage levels, etc. The ADA planning process should include participation by groups representing persons with disabilities from the community.
- **Area-wide Job Access Plans** are required when applying for Job Access/Reverse Commute funding. Preparation of a job access plan must be a joint effort by transportation and human service planners. Updates are

- needed if new elements are added to a JARC project not recommended in the original job access plan.
- **Route Profiles/Analyses** are studies that look at the pattern of passenger boardings and alightings along one or more bus route(s). This may be done for various reasons: to identify non-productive segments; to analyze whether to shift service to serve a facility a few blocks off the current route; or it could be a part of a passenger amenity study.
 - **Passenger Amenity Studies** are an organized way to analyze where the transit system or some other party should place bus stop pads, benches or shelters along bus routes. Factors typically considered include: the level of passenger usage, the type of passengers, and the nature of the location (how exposed it is, whether there is shelter nearby, whether it is muddy, etc.). The study may also look at alternative means of providing the amenities, such as through private vendors or through sponsorship by local groups or businesses.
 - **Fare Studies** look at the transit system's fares. Passenger revenues are not a major source of support for most transit systems, yet they are a source over which the transit system has more control than with most others. A fare study might compare the local transit system's fare structure with similarly situated systems. It should also look at the passenger mix and look at the probable impact of a fare increase or rollback in terms of both revenues and ridership.
 - **Transit Organizational Studies** typically look at how the transit system has been organized to accomplish its responsibilities, and compares this to alternative organizational structures that may be used by other transit systems or other agencies. Different structures will likely affect how the system is perceived locally, but it may also affect its ability to comply with federal requirements.
 - **Emergency Response Plans** typically involve an inventory of the systems vehicles and information about its radio system, etc, with a discussion of appropriate responses to different types of events.

Technical Assistance to Transit – There are a number of ways that planning agencies can provide assistance to the transit system other than in preparing plans. In many cases, this may involve sharing the benefits of technology or sharing the skills of planning staff. Some areas might include:

- **Assistance with marketing** may involve using desktop publishing to design a brochure or getting planning staff to write/edit copy for a brochure, an advertisement or a script.
- **Assistance with mapping** may involve using the planning agency's GIS to produce route maps or brochures.
- **Assistance with public involvement** may involve hosting a public hearing for the transit system or setting up a series of neighborhood meetings to discuss service changes.
- **Assistance with public opinion surveys** is a planning analysis tool, but can also be performed as a stand-alone function for the transit system.
- **Assistance with grant applications** is a function that tends to fit well with the planner's writing abilities and access to community data, although writing grant applications is technically not an eligible planning activity under transportation planning grants.

Funding Process for Transportation Planning

Iowa participates in the Unified Planning Grant program offered by FHWA and FTA. Under this program all FTA and FHWA planning funds, except those derived from the FTA 5311 program are administered by FTA through a unified planning grant. Although FTA has been unable or unwilling to incorporate the 5311-based planning funds into their Unified Planning Grants, Iowa does incorporate them into the unified planning agreements issued to its 5311 planning subrecipients.

The process begins with the development of the TPWP, as described earlier. The draft TPWP is due to Iowa DOT's Office of Systems Planning by the first business day of April. After review and comment by Iowa DOT, FHWA and FTA, the final version of the TPWP, as approved by the Policy Committee, becomes the basis for the MPO or RPA's annual application for planning assistance. Planning assistance agreements are issued and administered by the Office of Systems Planning and are based on the state's July 1 – June 30 fiscal year. The agreements simply provide the funding to carry out the activities listed in the TPWP, which is incorporated by reference.

Planning Technical Assistance from Iowa DOT

OPT provides two products that may be of help to local agencies conducting transit capital planning. The first is the "[OPT Program Guidance](#)" which gives standardized cost estimates for various sizes and types of transit revenue vehicles, along with information on their useful life thresholds. The standardized estimates must be used for any project that is a candidate for statewide funding, but should also be useful when programming projects using formula or local funds as well as for projecting future capital needs. The guidance is available on OPT's website at <http://www.iatransit.com/resources/applications.asp>.

The second useful product is a calculator that helps determine PTMS points for a particular vehicle. An online calculator is available on OPT's website at <http://www.iatransit.com/regulations/ptms.asp>.

Other Planning Topics

Minimum Expectation for RPAs – In 1999, the Iowa DOT and the Iowa Association of Regional Councils negotiated an agreed upon set of standards for Iowa's RPAs. These can be viewed at http://www.iatransit.com/admin/handbook/docs/ch4_rpa_process.doc.

Transit Training Fellowships for Planners – The Iowa DOT encourages the staff of Iowa's MPOs and RPAs to get involved and to learn more about public transit. MPO and RPA staff are eligible for transit training fellowships, as long as they can show that their participation in a particular training session or conference will benefit transit. See [Chapter 12](#) for further discussion of the Transit Training Fellowship programs.

Private Sector Involvement in Transportation Planning – The federal government requires that private for-profit providers of transit services be given the opportunity to participate in the transportation planning process. The joint planning regulations from FHWA and FTA specifically address a need to provide all private providers with "timely information about transportation issues and processes," and to allow "involvement" in the planning process to "appropriate private transportation providers," including both for-profit transit providers and private owners of toll facilities.

Planning agencies are encouraged to take advantage of OPT's Private Sector Mailing Clearinghouse function to provide notice to private for-profit transit operators, anytime notice is being given to the public involving public hearings or public input sessions related to the planning process. (See [Chapter 15](#).)